Fledgling Double-crested Cormorants Rehearse a Food Manipulation Technique with Woody Debris, Algae, and Shells

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Abstract.—Fledgling Double-crested Cormorants (*Phalacrocorax auritus*) were observed practicing food manipulation techniques with large sticks, algae, and shells at their respective natal colonies in eastern Lake Ontario, North Channel of Lake Huron, and Lake of the Woods. Although practice behaviors have been documented for other species of waterbirds, this behavior has not been recorded previously for Double-crested Cormorants. *Received 16 May 2007, accepted 18 September 2007.*

Key words.—Double-crested Cormorant, *Phalacrocorax auritus*, fledgling behavior, forage technique, food item manipulation.

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In many bird species with highly specialized foraging strategies, juveniles are less efficient than adults at capturing and manipulating prey. With age comes experience; young individuals gradually develop and improve their technique, increasing foraging success (Orians 1969; Recher and Recher 1969; Dunn 1972; Buckley and Buckley 1974; Verbeek 1977; Morrison *et al.* 1978; Cezilly and Boy 1988). Few observations exist of terns learning to forage by example and gulls utilizing tools, but little is known about the development of these foraging techniques (Dunn 1972; LeCroy 1972; Ingolfsson and Estrella 1978; Henry and Aznar 2006). Dunn (1972) observed newly fledged Sandwich Terns (*Sterna sandvicensis*) practice hunting by making shallow plunge dives and reported, "These early efforts were never seen to be rewarded with edible prey and usually pieces of algae or inanimate objects were picked up." A case of fledgling Double-crested Cormorants (*Phalacrocorax auritus*, hereafter termed cormorants) practicing food item manipulation techniques with inanimate objects is reported here.

OBSERVATION

A previously undocumented behavior of fledgling cormorants was first recorded on Snake Island in eastern Lake Ontario (approximately 11 km southwest of Kingston, Ontario, Canada) on 20 and 21 June 2006. On 20 June, at 09.15 h, while observing a colony of roughly 1,250 cormorants (625 pairs) from a blind, two approximately 4-week-old cormorant chicks appeared to be fighting over stick debris. One chick kept manipulating the stick in its bill—flipping it around just as if it were a fish—until it turned the stick and started to swallow it. When the stick was almost completely swallowed, the bird would regurgitate it and repeat the whole exercise again. The cormorant chicks would steal the stick from one another, taking turns trying to swallow the debris. This process continued for several minutes. No other chicks were observed exhibiting this behavior at that time. The following day, 21 June, at 05.35 h, an approximately 4-week-old cormorant chick was observed displaying the same stick manipulation behavior. It is unknown whether this was one of the same individuals observed on 20 June; however, this bird was located on the opposite side of the colony. The stick was approximately 20 mm in diameter, crooked, and almost as long as the chick was tall (approximately 0.5 m). During the 5 min the bird was monitored, the chick "swallowed" the stick 3 times. A few chicks at the water's edge were observed manipulating large shells with their bills. These chicks flipped the shells around but never swallowed them. The colony was under surveillance until 13.30 h (a total of 29 consecu-

tive h) and these were the only instances of debris manipulation witnessed.

On 16 and 17 July 2007, several fledgling cormorants were again observed practicing this food manipulation behavior with sticks and large clumps of algae on Snake Island. This behavior was also observed during July and September 2007 at cormorant colonies on West Island in the North Channel of Lake Huron (approximately 7 km southwest of Blind River, Ontario, Canada) and on an island north of Lemon Island in Lake of the Woods (approximately seven km south of Kenora, Ontario, Canada). In order to document an important but otherwise overlooked part of chick cognitive development, the authors believe this Double-crested Cormorant chick food manipulation practice behavior is worth mentioning.

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LITERATURE CITED

Buckley, F. G. and P. A. Buckley. 1974. Comparative feeding ecology of wintering adult and juvenile Royal Terns (Aves: Laridae, Sterninae). Ecology 55: 1053-1063.

Cezilly, F. and V. Boy. 1988. Age related differences in foraging Little Egrets, *Egretta garzetta*. Colonial Waterbirds 11: 100-106.

Dunn, E. K. 1972. Effect of age on the fishing ability of Sandwich Terns *Sterna sandvicensis*. Ibis 114: 360-366.

Henry, P. Y. and J. C. Aznar. 2006. Tool-use in Charadrii: active bait-fishing by a Herring Gull. Waterbirds 29: 233-234.

Ingolfsson, A. and B. T. Estrella. 1978. The development of shell-cracking behavior in Herring Gulls. Auk 95: 577-579.

LeCroy, M. 1972. Young Common and Roseate Terns learning to fish. Wilson Bulletin 84: 201-202.

Morrison, M. L., R. D. Slack and E. Shanley, Jr. 1978. Age and foraging ability relationships of Olivaceous Cormorants. Wilson Bulletin 90: 414-422.

Orians, G. H. 1969. Age and hunting success in the Brown Pelican *Pelicanus occidentalis*. Animal Behaviour 17: 316-319.

Recher, H. F. and J. A. Recher. 1969. Comparative foraging efficiency of adult and immature Little blue Herons (*Florida caerulea*). Animal Behaviour 17: 320-322.

Verbeek, N. A. M. 1977. Comparative feeding behavior of immature and adult Herring Gulls. Wilson Bulletin 89: 415-421.